



DEFENSE ACQUISITION UNIVERSITY

CMQ 242 - Measuring Techniques

150410

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

1	Given a description of measurement conditions, select the correct measurement tool and technique for each type of measurement.
	Identify the differential measurement method.
	Identify the direct measurement method.
	Identify the transfer measurement method.
	Identify the considerations taken when choosing a measurement method.
	Recognize the type of measurement tools used in each measurement method.
	Identify the considerations taken when measuring circularity.
	Indicate the procedure for measuring circularity.
	Identify considerations taken when measuring cylindricity.
	Indicate the procedure for measuring cylindricity.
	Indicate the tools used to measure lobes.
	Define free-state variation.
	Identify the considerations taken when measuring free-state variation.
2	Given descriptions of typical measurement conditions, recognize common measurement procedures.
	Recognize the procedure for using mechanical indicators.
	Identify the procedure for correcting a cosine error in mechanical indicators.
	Recognize the procedure for confirming the repeatability and accuracy of mechanical indicators.
	Define Total Indicator Reading (TIR), Full Indicator Reading (FIR), and Full Indicator Movement (FIM) standards for using mechanical indicators.
	Recognize the procedures for reading vernier scales.
	Recognize the procedure for reading analog scales.
	Recognize the procedure for reading digital scales.
	Identify the use of fixed gages.
3	Given a simulated environment and tools, use a steel rule to take a measurement to within tolerance.
	Recognize the procedure for using steel rules.
	Use a steel rule to take a measurement.
4	Given a simulated environment and tools, use a protractor to take a measurement to within tolerance.
	Recognize the procedure for using protractors.
5	Given a simulated environment and tools, use a caliper to take a measurement to within tolerance.
	Recognize the procedure for using calipers.
	Use a caliper to take a measurement.
6	Given a simulated environment and tools, use a micrometer to take a measurement to within tolerance.
	Recognize the procedure for using a micrometer.
	Use a micrometer to take a measurement.
7	Given a simulated environment and tools, use tapered parallels to take a measurement to within tolerance.
	Recognize the procedure for using tapered (adjustable) parallels.
8	Given a simulated environment and tools, use gage blocks to take a measurement to within tolerance.
	Recognize the procedure for using gage blocks.
	Use gage blocks to take a measurement.



DEFENSE ACQUISITION UNIVERSITY

CMQ 242 - Measuring Techniques

150410

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

9	Given a simulated environment and tools, use a surface plate to take a measurement to within tolerance.
	Recognize the procedure for using surface plates.
	Use a surface plate to take a measurement.
10	Given a simulated environment and tools, use surface plate gages to take a measurement to within tolerance.
	Recognize the procedure for using surface plate gages.
	Use a surface plate gage to take a measurement.
11	Given a simulated environment and tools, use gage pins to take a measurement to within tolerance.
	Recognize the procedure for using gage pins.
	Use gage pins to take a measurement.
12	Given a simulated environment and tools, use a feeler gage to take a measurement to within tolerance.
	Recognize the procedure for using feeler gages.
	Use a feeler gage to take a measurement.
13	Given a simulated environment and tools, use a dial depth gage to take a measurement to within tolerance.
	Recognize the procedure for using dial depth gages.
	Use a dial depth gage to take a measurement.
14	Given a simulated environment and tools, use a bore gage to take a measurement to within tolerance.
	Recognize the procedure for using bore gages.
	Use a bore gage to take a measurement.
15	Given a simulated environment and tools, use a radius gage to take a measurement to within tolerance.
	Recognize the procedure for using radius gages.
	Use a radius gage to take a measurement.
16	Given a simulated environment and tools, use a small hole gage to take a measurement to within tolerance.
	Recognize the procedure for using small hole gages.
	Use a small hole gage to take a measurement.
17	Given a simulated environment and tools, use a telescoping gage to take a measurement to within tolerance.
	Recognize the procedure for using telescoping gages.
	Use a telescoping gage to take a measurement.
18	Given a simulated environment and tools, use a plug gage to take a measurement to within tolerance.
	Recognize the procedure for using plug gages.
	Use a plug gage to take a measurement.
19	Given a simulated environment and tools, use a ring gage to take a measurement to within tolerance.
	Recognize the procedure for using ring gages.
	Use a ring gage to take a measurement.
20	Given a simulated environment and tools, use surface finish measurement tools to take a measurement to within tolerance.
	Recognize the procedure for using surface finish measurement tools.
	Use surface finish measurement tools to take a measurement.
21	Given a simulated environment and tools, use a torque wrench to take a measurement to within tolerance.
	Recognize the procedure for using torque wrenches.
	Use a torque wrench to take a measurement.